## POVERNATIC® WMH TOOL GROUP

### Operating Instructions and Parts Manual Powered Stock Feeder for Band Saws Model PF-BS



### WMH TOOL GROUP

2420 Vantage Drive Elgin, Illinois 60123 Ph.: 800-274-6848 www.wmhtoolgroup.com This manual has been prepared for the owner and operators of a Powermatic Model PF-BS Stock Feeder. Its purpose, aside from machine operation, is to promote safety using accepted operating and maintenance procedures. To obtain maximum life and efficiency from your Stock Feeder and to aid in using it safely, please read this manual thoroughly and follow the instructions carefully.

### **Warranty and Service**

WMH Tool Group warrants every product it sells. If one of our tools needs service or repair, one of our Authorized Repair Stations located throughout the United States can provide quick service or information.

In most cases, a WMH Tool Group Repair Station can assist in authorizing repair work, obtaining parts, or perform routine or major maintenance repair on your Powermatic product.

For the name of an Authorized Repair Station in your area, please call 1-800-274-6848, or visit our web site at www.wmhtoolgroup.com

### More Information

Remember, WMH Tool Group is consistently adding new products to the line. For complete, up-to-date product information, check with your local WMH Tool Group distributor, or visit our web site at www.wmhtoolgroup.com

### **WMH Tool Group Warranty**

WMH Tool Group makes every effort to assure that its products meet high quality and durability standards and warrants to the original retail consumer/purchaser of our products that each product be free from defects in materials and workmanship as follows: 1 YEAR LIMITED WARRANTY ON ALL PRODUCTS UNLESS SPECIFIED OTHERWISE. This Warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, repair or alterations outside our facilities, or to a lack of maintenance.

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To take advantage of this warranty, the product or part must be returned for examination, postage prepaid, to an Authorized Repair Station designated by our office. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection discloses a defect, we will either repair or replace the product at our discretion, or refund the purchase price if we cannot readily and quickly provide a repair or replacement. We will return the repaired product or replacement at WMH Tool Group's expense, but if it is determined there is no defect, or that the defect resulted from causes not within the scope of WMH Tool Group's warranty, then the user must bear the cost of storing and returning the product. This warranty gives you specific legal rights; you may also have other rights, which vary from state to state.

WMH Tool Group sells through distributors only. Members of the WMH Tool Group reserve the right to effect at any time, without prior notice, alterations to parts, fittings and accessory equipment, which they may deem necessary for any reason whatsoever.

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- 1. Read and understand the entire owners manual before attempting assembly or operation.
- 2. Read and understand the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.
- 3. Replace the warning labels if they become obscured or removed.
- 4. This stock feeder is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a stock feeder, do not use until proper training and knowledge have been obtained.
- Do not use this stock feeder for other than its intended use. If used for other purposes, WMH Tool Group disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
- 6. Always wear approved safety glasses/face shields while using this stock feeder. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.
- 7. Before operating this stock feeder, remove tie, rings, watches and other jewelry, and roll sleeves up past the elbows. Remove all loose clothing and confine long hair. Non-slip footwear or anti-skid floor strips are recommended. Do **not** wear gloves.
- 8. Wear ear protectors (plugs or muffs) during extended periods of operation.
- 9. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
  - Lead from lead based paint.
  - Crystalline silica from bricks, cement and other masonry products.
  - Arsenic and chromium from chemically treated lumber.

Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as face or dust masks that are specifically designed to filter out microscopic particles.

- 10. Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.
- 11. Make certain the switch is in the **OFF** position before connecting the machine to the power supply.
- 12. Make certain the machine is properly grounded.
- 13. Make all machine adjustments or maintenance with the machine unplugged from the power source.
- 14. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
- 15. Keep safety guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately.
- 16. Make sure the stock feeder is firmly secured to the band saw before use.
- 17. Check damaged parts. Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
- 18. Provide for adequate space surrounding work area and non-glare, overhead lighting.
- 19. Keep the floor around the machine clean and free of scrap material, oil and grease.
- 20. Keep visitors a safe distance from the work area. Keep children away.



- 21. Make your workshop child proof with padlocks, master switches or by removing starter keys.
- 22. Give your work undivided attention. Looking around, carrying on a conversation and "horse-play" are careless acts that can result in serious injury.
- 23. Maintain a balanced stance at all times so that you do not fall or lean against moving parts. Do not overreach or use excessive force to perform any machine operation.
- 24. Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and safer.
- 25. Use recommended accessories; improper accessories may be hazardous.
- 26. Maintain tools with care. Follow instructions for lubricating and changing accessories.
- 27. Turn off the stock feeder before cleaning. Use a brush or compressed air to remove chips or debris do not use your hands.
- 28. Do not stand on the machine. Serious injury could occur if the machine tips over.
- 29. Never leave the machine running unattended. Turn the power off and do not leave the machine until it comes to a complete stop.
- 30. Remove loose items and unnecessary work pieces from the area before starting the machine.
- 31. Check your stock for loose knots, nails or other aspects that may create a safety hazard or affect the machine's performance.

### Familiarize yourself with the following safety notices used in this manual:

This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.

**AWARNING** This means that if precautions are not heeded, it may result in serious injury or possibly even death.

### -- SAVE THESE INSTRUCTIONS --

### Introduction

This manual is provided by Powermatic covering the safe operation and maintenance procedures for a Model PF-BS Stock Feeder and Fence for Band Saws. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. This machine has been designed and constructed to provide years of trouble free operation if used in accordance to instructions set forth in this manual. If there are any questions or comments, please contact either your local supplier or WMH Tool Group. WMH Tool Group can also be reached at our web site: www.wmhtoolgroup.com.

### **Description**

The PF-BS Stock Feeder is designed for mounting to a band saw table 24" or larger in width. This heavy duty Stock Feeder has a cast iron frame, and is ideal for plank splitting and under-bark trimming. The serrated steel rollers provide a positive grip on the workpiece, and the tension against the workpiece can be quickly and simply adjusted by turning a hex nut. The adjustable feed rate covers a range of eight speeds.

### **Specifications**

Model Number	
Stock Number – 1 Ph, 230V	
Stock Number – 3 Ph, 230V	
Stock Number – 3 Ph, 460V	1790821
Fence:	
Width (in.)	12-1/2
Height (in.)	8
Feeder:	
Width (in.)	21-1/2
Height (in.)	11-3/4
Length with Handle Installed (in.)	40
Column Diameter (in.)	2.28
Rollers (Dia. x W)(in.)	7 x 1-1/2
Motor	TEFC, 1/2HP, 1Ph or 3Ph
Rotation	Forward only
Number of Speeds	8
Speed Range (FPM)	10-17-20-27-33-45-57-93
Workpiece Thickness Allowed (in.)	7.1
Swing (deg.)	30
Fence Horizontal Movement (in.)	4
Approximate Net Weight (lbs.)	
Approximate Shipping Weight (lbs.)	211

The above specifications were current at the time this manual was published, but because of our policy of continuous improvement, WMH Tool Group reserves the right to change specifications at any time and without prior notice, without incurring obligations.

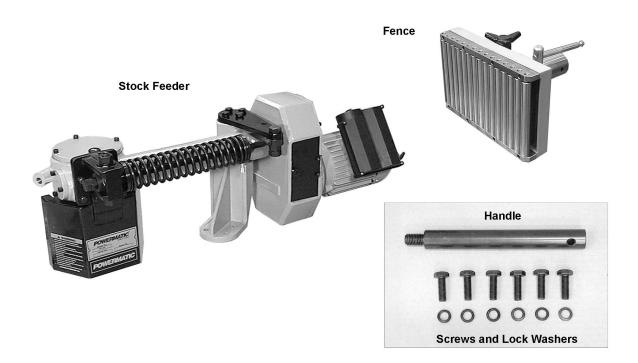
### **Unpacking**

Remove the plastic from around the Feeder and Fence, and check for shipping damage. Report any damage immediately to your distributor and shipping agent. Do not discard any shipping material until the Stock Feeder is assembled and running properly.

Compare the contents of your container with the following parts list to make sure all parts are intact. Missing parts, if any, should be reported to your distributor. Read the instruction manual thoroughly for assembly, maintenance and safety instructions.

### **Contents of the Shipping Container**

- 1 Stock Feeder
- 1 Fence Assembly
- 1 Handle
- 6 Hex Cap Screws, M10 x 30
- 6 Lock Washers, M10
- 1 Owner's Manual
- 1 Warranty Card



Read and understand the entire contents of this manual before attempting set-up or operation! Failure to comply may cause serious injury.

### **Mounting Hole Location**

NOTE: Dimensions are in inches, hole sizes are metric.

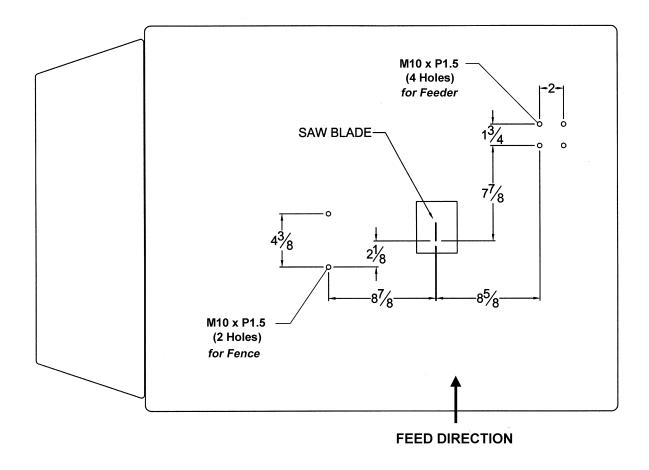


Figure 1

### **Assembly and Installation**

### Tools needed for assembly:

8.5mm drill bit M10 x 1.5P tap 17mm wrench

Remove the clear plastic from around the Stock Feeder and Fence Assembly.

Exposed metal surfaces have been given a protective coating at the factory. This should be removed with a soft cloth moistened with a good commercial solvent, such as kerosene or mineral spirits. Do not use acetone, gasoline, or lacquer thinner for this purpose. Do not get solvents near plastic or rubber parts, and do not use an abrasive pad because it may scratch metal surfaces.

The Stock Feeder should be mounted to a band saw table in a well-lit area. Leave enough space around the work area for loading and off-loading stock and general maintenance.

AWARNING The Stock Feeder and the band saw to which you are mounting it should both be disconnected from power during installation.

Follow these steps to assemble and install the Stock Feeder and Fence:

Use the diagram in Figure 1 (page 8) to identify the proper location for marking the hole patterns on the band saw table. Do not drill and tap the holes yet, only mark them.

### **Mounting the Fence**

- 1. The fence **must** be parallel with the blade for accurate cuts as well as for safety. To achieve this, mark the location of the near hole for the Fence based on the dimensions in Figure 1, page 8. Drill and tap the near hole then place the fence over the hole pattern. Insert an M10 x 30 hex cap screw with lock washer into the near hole, as shown in Figure 2. With a 17mm wrench, make the screw snug. Do not tighten completely.
- 2. Loosen the handle (A, Figure 3) and rotate the knob (B, Figure 3) until the fence is right up to the blade; that is, the scale on the fence should be at "0".

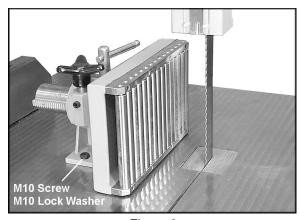


Figure 2

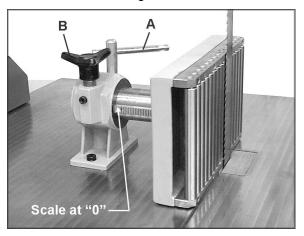


Figure 3

- 3. Tighten the handle (A, Figure 3). If necessary, move the Fence slightly to bring it parallel with the blade.
- 4. When satisfied, mark the location of the second hole using the hole in the Fence base as your template.
- 5. Remove the Fence from the table, and drill and tap the second hole.
- Place the Fence over the hole pattern again, and secure the Fence to the table with two M10 x 30 hex cap screws and two M10 lock washers. Tighten firmly.

### **Mounting the Feeder**

1. Screw the handle (Figure 4) all the way into the threaded hole of the Stock Feeder.

NOTE: If the mounting surface is narrow, a bracket (not provided) must be attached to support the Stock Feeder. Figure 5 shows an example.

The Stock Feeder is heavy. Use a hoist during installation procedures. Failure to comply may cause injury!

- Figure 6 shows the proper method of lifting the Stock Feeder with a hoist. Place one end of the strap or rope around the motor mount and the other end around the handle, as shown.
- Lift the Stock Feeder carefully into place over the hole pattern previously marked on the band saw table, and verify that the hole pattern lines up correctly with the holes in the Stock Feeder base.
- 4. Remove the Stock Feeder, and drill and tap the four holes.
- 5. Secure the Stock Feeder to the table with four M10 x 30 hex cap screws and four M10 lock washers. See Figure 7.
- 6. It is important that the serrated rollers of the Stock Feeder are properly positioned in reference to the blade. Figure 8 shows how the center of the rollers should be aligned with the front tips of the blade teeth. The gearbox top cover is aligned with the rollers, so you can use the top cover's center for making this alignment. See Figure 8.

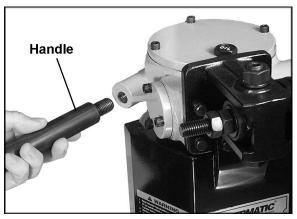


Figure 4

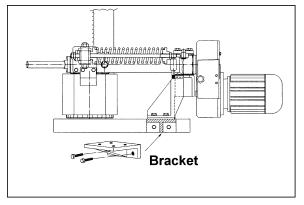


Figure 5

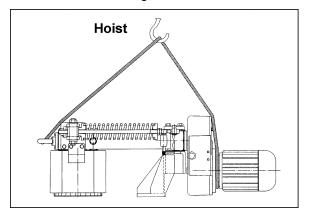


Figure 6



Figure 7

### **Grounding Instructions**

AWARNING Electrical connections must be made by a qualified electrician in compliance with all relevant codes. This machine must be properly grounded to help prevent electrical shock and possible fatal injury.

As received from the factory, the PF-BS Stock Feeder will run on either 230 volt or 460 volt, depending upon your particular model. Make sure the voltage of your power supply matches the specifications on the motor plate of the machine.

You may either connect an appropriate UL/CSA listed plug or "hard-wire" the machine directly to a control panel. If hard-wired to a panel, make sure a disconnect is available for the operator. The Stock Feeder must comply with all local and national codes after being wired. If it is to be hard-wired, make sure the fuses have been removed or the breakers have been tripped in the circuit to which the Stock Feeder will be connected. Place a warning placard on the fuse holder or circuit breaker to prevent it being turned on while the machine is being wired.

Refer to "Electrical Connections" on page 23 for connecting the motor leads.

This machine must be grounded. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current, to reduce the risk of electric shock to the operator. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor, with insulation having an outer surface that is green with or without yellow stripes, is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Repair or replace a damaged or worn cord immediately.

### **Extension Cords**

If an extension cord is necessary make sure the cord rating is suitable for the amperage listed on the machine's motor plate. An undersize cord will cause a drop in line voltage resulting in loss of power and overheating.

The chart in Figure 9 shows the correct size cord to use based on cord length and motor plate amp rating. If in doubt, use the next heavier gauge. The smaller the gauge number the heavier the cord.

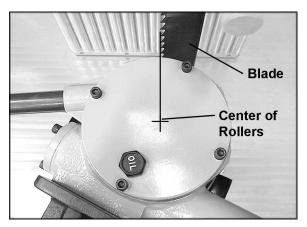


Figure 8

### Recommended Gauges (AWG) of Extension Cords

	Extension Cord Length *					
Amps	25 feet	50 feet	75 feet	100 feet	150 feet	200 feet
< 5	16	16	16	14	12	12
5 to 8	16	16	14	12	10	NR
8 to 12	14	14	12	10	NR	NR
12 to 15	12	12	10	10	NR	NR
15 to 20	10	10	10	NR	NR	NR
21 to 30	10	NR	NR	NR	NR	NR

<sup>\*</sup>based on limiting the line voltage drop to 5V at 150% of the rated amperes.

NR: Not Recommended.

Figure 9

### **Adjustments**

### **Fence Movement**

To move the fence toward or away from the saw blade, loosen the lock handle (A, Figure 10) and rotate the knob (B, Figure 10).

A millimeter scale is inscribed on the edge of the rack (C, Figure 10).

After adjustment, re-tighten lock handle (A, Figure 10).

### **Spring Tension**

The amount of tension directed against the workpiece is controlled by the spring, and is adjustable. Regulate the tension on the spring by turning the hex nut, shown in Figure 11. Turn the hex nut clockwise to increase tension, counterclockwise to decrease tension.

### **Arm Positioning**

The arm of the Stock Feeder can be pulled away from the blade and secured there by pushing up the stop rod (Figure 11) into the hole in the bracket. NOTE: Make sure the stop rod is pushed up as far as it will go into the hole.

To release the arm, pull back slightly on the handle of the Stock Feeder, and pull the stop rod downward out of the hole. Carefully allow the arm to swing back toward the blade.

The arm will swing back toward the blade with force when the spring is tensioned. Guide the arm back without letting it hit the saw blade.

# A B C

Figure 10

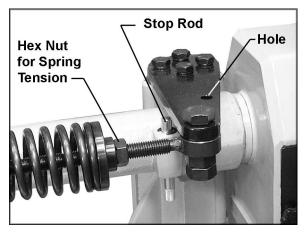


Figure 11

### **Rollers to Blade Distance**

The distance of the serrated rollers to the band saw blade can be fine-adjusted with the hex nuts (Figure 12).

- 1. Loosen outer hex nut (B, Figure 12).
- Pull back on the Stock Feeder arm, and turn the inner hex nut (A, Figure 12) as needed.
- 3. Lock the setting by tightening the outer hex nut (B, Figure 12) up against the inner hex nut (A, Figure 12).

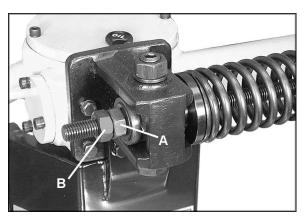


Figure 12

### **Changing Feed Rate**

- Loosen the two hex nuts (one is shown in Figure 13) that hold the motor to the motor mount. Use a 12mm wrench. Do not remove the hex nuts, loosen them only enough so that the motor can be pivoted.
- 2. Pivot the motor counterclockwise, as shown in Figure 13. This will produce slack in the belt.
- 3. Open the pulley cover door (Figure 14) by unscrewing the knob.
- 4. Roll the belt into the appropriate pulley groove for the desired feed rate. A label is affixed to the inside of the door (Figure 14) that shows the configurations for belt position/feed rate in both feet per minute and meters per minute. This feed rate chart is also reproduced on page 16.
- 5. When the belt has been changed, close the pulley door and tighten the knob.
- 6. Rotate the motor clockwise to tension the belt. Proper tension is achieved when the belt can be deflected approximately 3 to 5mm with slight finger pressure.
- 7. Tighten the two hex nuts (Figure 13).

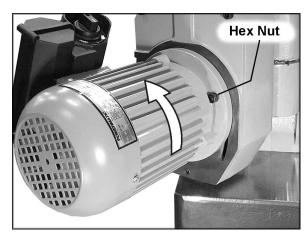


Figure 13

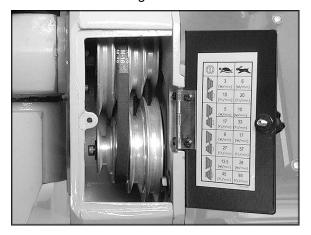


Figure 14

### **Operating Controls**

The control switch (Figure 15) turns on the Stock Feeder motor, and also helps determine feed rate in conjunction with the pulley position. "Fast" and "Slow" are identified by the universal symbols of hare and tortoise.

### **Operation**

**IMPORTANT:** Before attempting operation of this stock feeder in conjunction with a band saw, you should be thoroughly familiar with the operating and safety instructions that were included with the band saw.

AWARNING Keep hands away from rollers, spring, and other pinch points of the Stock Feeder during operation. Failure to comply may cause injury.

The following are basic steps for operating the Stock Feeder.

 Make sure the band saw is working properly and that the blade is sharp; and that all guards are properly installed.

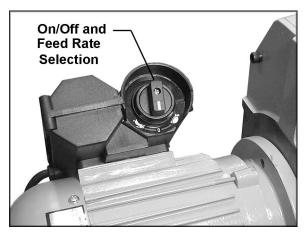


Figure 15

- Set the desired rate of feed on the Stock Feeder by moving the belt to the proper pulley grooves. Proper rate of feed will depend upon the hardness and thickness of the workpiece, and is best learned through experience.
- Set the Fence so that the dimension on the scale (C, Figure 10) matches the desired thickness of the workpiece. Secure the Fence in position with the locking handle.
- 4. Turn on the band saw and the Stock Feeder, and carefully feed the workpiece through the blade.

NOTE: If a jam should occur while feeding, turn off the band saw and the Stock Feeder, pivot the Stock Feeder out of the way, and remove the workpiece. Return the Stock Feeder to position and begin the cut over again.

### **Maintenance**

maintenance on the Stock Feeder, disconnect it from the electrical supply by pulling out the plug or switching off the breaker. Also make sure the band saw is disconnected from power. Failure to comply may cause serious injury.

If the power cord is worn, cut, or damaged in any way, have it replaced immediately.

Frequently blow out dust and chips from the Stock Feeder with compressed air.

### Lubrication

### **Gearbox**

The Stock Feeder is shipped with oil installed in the gearbox. Check the oil about every 3 months and top off as necessary with a good quality general-purpose gear oil.

To add oil to the gearbox:

- 1. Loosen and remove the oil cap (Figure 16).
- 2. Fill with oil up to level, by observing the level indicator (Figure 17).
- 3. Re-install the oil cap.

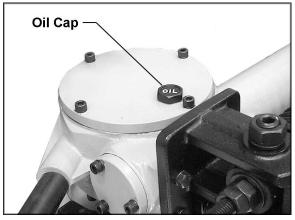


Figure 16

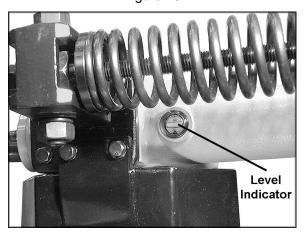


Figure 17

### **Arm Axis**

Keep the axis of the arm lubricated with a good quality general purpose grease, inserted through the grease fitting (Figure 18).

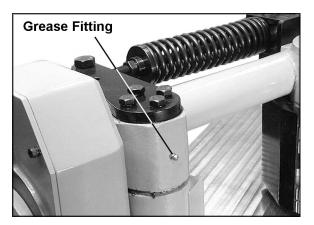


Figure 18

### **Fence**

At least once a week, place a light coat of oil on the sliding column of the fence. Also place a drop of oil on each roller pin. See Figure 19.

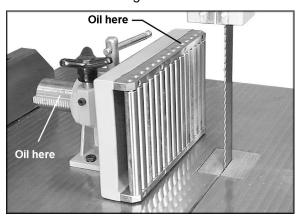


Figure 19

### **Troubleshooting**

Trouble	Probable Cause	Remedy	
	Not connected to power source.	Check power connections.	
Feeder will not start.	Fuse blown, or circuit breaker tripped.	Replace fuse, or reset circuit breaker.	
	Cord damaged.	Replace cord.	
Feed rate is not sufficient; or machine has low power.	Belt not situated in correct pulley grooves to achieve desired speed.	Install belt in correct pulley grooves. [page 13]	
	Extension cord too light or too long.	Replace with adequate size and length cord. [page 11]	
	Low current from electrical supply.	Contact a qualified electrician.	

### **Feed Rate/Belt Position**

	9	5
M	3 (M/min)	6 (M/min)
	10 (Ft/min)	20 (Ft/min)
M	5 (M/min)	10 (M/min)
	17 (Ft/min)	33
	8 (M/min)	17 (M/min)
	27 (Ft/min)	57 (Ft/min)
M	13.5 (M/min)	28 (M/min)
	45 (Ft/min)	93 (Ft/min)

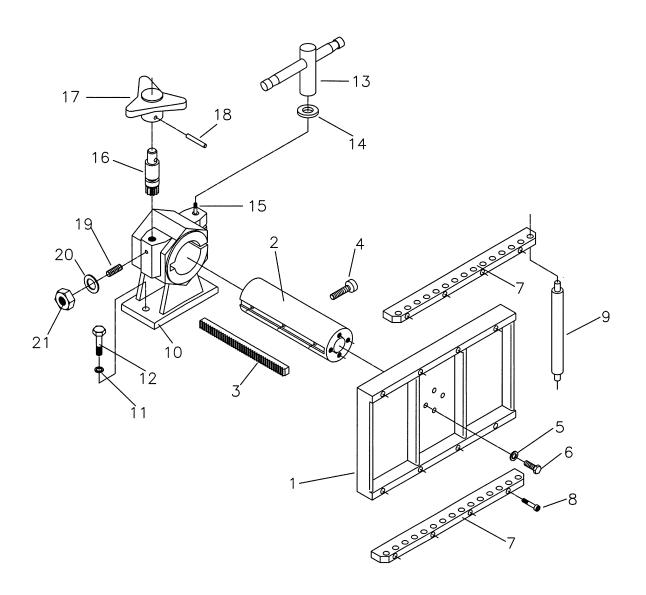
### **Replacement Parts**

Replacement parts are listed on the following pages. To order parts or reach our service department, call 1-800-274-6848 between 7:00 a.m. and 6:00 p.m. (CST), Monday through Friday. Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately.

### Parts List: Fence Assembly

Index No. Part No.	Description	Size	Qty
1PFBS-101	Roller Fence		1
2PFBS-102	Column		1
3PFBS-103	Rack		1
4TS-1502031	Socket Head Cap Screw	M5x12	3
	Lock Washer		
	Hex Cap Screw		
	Roller Mounting Strip		
	Socket Head Cap Screw		
9PFBS-109	Fence Roller		15
	Mounting Base		
	Lock Washer		
	Hex Cap Screw		
	Lock Handle		
	Flat Washer		
	Stud		
	Pinion		
	Knob		
	Pin		
	Socket Set Screw		
	Lock Washer		
21TS-1540061	Hex Nut		

### Fence Assembly

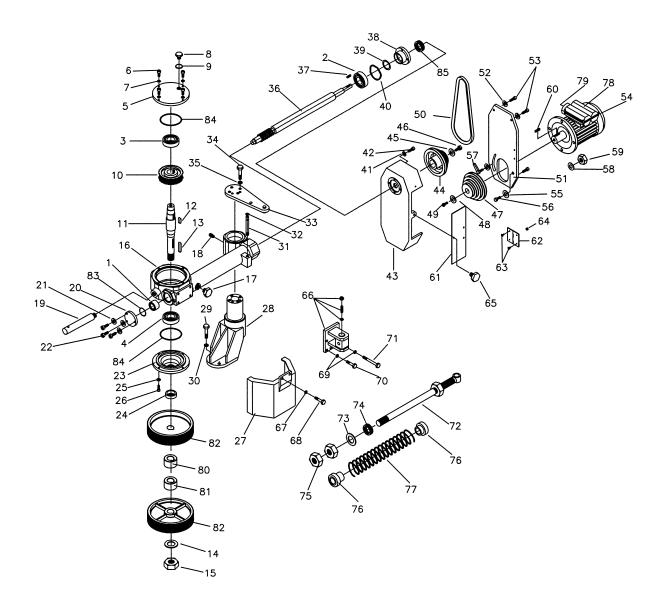


### Parts List: Feeder Assembly

Index No.		Description		Qty
		Ball Bearing		
5	.PFBS-205	Gearbox Top Cover		1
6	.TS-1503051	Socket Head Cap Screw	M6x20	4
		Lock Washer		
8	.PFBS-208	Oil Cap		1
9	.PFBS-209	"O" Ring		1
		Worm Gear		
11	.PFBS-211	Gear Shaft		1
12	.PFBS-212	Key	8x7x20	1
		Key		
		Flat Washer		
		Hex Nut		
		Reduction Gearbox		
		Level Indicator		
		Grease Fitting		
		Handle		
-		Worm Gear Cover		
		Lock Washer		
		Socket Head Cap Screw		
		Gearbox Bottom Cover		
		Retaining Ring		
		Lock Washer		
		Socket Head Cap Screw		
		Roller Cover		
		Mounting Base		
		Hex Cap Screw		
		Lock Washer		
		Stop Rod		
		"E" Clip		
33	.PFBS-233	Stop Plate		1
34	.TS-1491031	Hex Cap Screw	M10x25	4
35	.TS-2361101	Lock Washer	M10	4
36	.PFBS-236	Worm		1
37	.PFBS-237	Key	5x5x25	1
38	.PFBS-238	Worm Gear Cap		1
39	.PFBS-239	Compensating Collar		1
		Oil Seal		
41	.TS-1551041	Lock Washer	M6	4
		Socket Head Cap Screw		
		Pulley Housing		
		Worm Gear Pulley		
45	.TS-1550041	Flat Washer	M6	1
		Hex Cap Screw		
47	.PFBS-247	Motor Pulley		1
48	.TS-1550041	Flat Washer	M6	1
		Socket Head Cap Screw		
		Belt		
		Pulley Housing Cover		
52	.TS-1551041	Lock Washer	M6	2
53	.TS-1503041	Socket Head Cap Screw	M6x16	3
54	.PFBS-254	Motor	1/2 HP, 230V, 3Ph	1
		Motor		
		Motor		
	.PFBS-254CA	Capacitor (only for 1 phase) - Not shown	350V 25uf	1

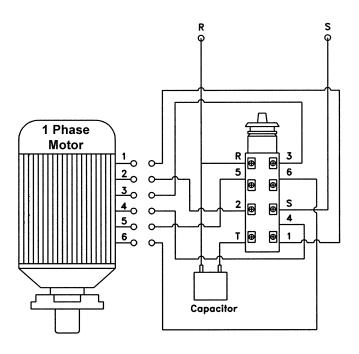
Index No. Part No.	Description	Size	Qty
55TS-1550061	Flat Washer	M8	2
56TS-1490061	Hex Cap Screw	M8x35	1
	Lock Screw		
58TS-2361081	Lock Washer	M8	2
59TS-1540061	Hex Nut	M8	2
60PFBS-260	Key	5x5x30	1
	Pulley Housing Door		
62PFBS-262	Hinge		1
63TS-2171012	Machine Screw, Pan Head	M4x6	4
	Hex Nut		
65PFBS-265	Knob		1
	Spring Hinge		
	Lock Washer		
	Hex Head Bolt		
69TS-2361081	Lock Washer	M8	3
70TS-1490041	Hex Cap Screw	M8x25	3
	Hex Cap Screw		
	Spring Adjusting Rod		
	Flat Washer		
74PFBS-274	Bumper Ring		1
75TS-154009	Hex Nut	M14	3
	Spring Guide Set (2 Pieces/Set)		
	Spring		
	Switch Box Kit		
	Switch Kit		
	Spacer		
	Bushing		
	Steel Roller		
	Oil Seal		
	Oil Seal		
	Oil Seal		
86PFBS-286	Label, Feed Rate (not shown)		1
87PFBS-287	Warning Label (not shown)		1

### Feeder Assembly

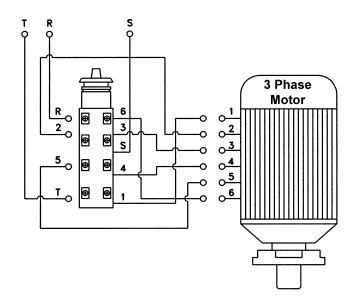


### **Electrical Connections**

### Single Phase



### Three Phase





WMH Tool Group 2420 Vantage Drive Elgin, Illinois 60123 Phone: 800-274-6848 www.wmhtoolgroup.com